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# **ABSTRACT**

A waveguide directional filter is described for combining multiple high power UHF television broadcasting transmitters on to a common antenna.

The filter arrangement comprises a input waveguide (1) and a output waveguide (2). The waveguides are rectangular having broad walls (3) joined by narrow walls (4) whose width/height ratio is approximately 4:1. The two waveguides are connected by at least one direct-coupled cavity resonator (5). Coupling between the cavity and each waveguide is obtained by a respective characteristic aperture (7, 7a) in the form of a rectangle whose four sides have inwardly extending hemicycle sectors (8, 9, 10 and 11).

09/857104